X, No. 5
ember 1959

CALIFORNIA JOURNAL OF EDUCATIONAL RESEARCH

EDUCATION READING ROOM

IN THIS ISSUE:

L11
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Vol. 10
No. 5.

RESEARCH AND THE PURSUIT OF EXCELLENCE

The Theme of the

ELEVENTH ANNUAL STATE CONFERENCE ON EDUCATIONAL RESEARCH

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- Psychometric Study of Student Attitudes
- Responses of Students on the Group Rorschach Test
- Perceptual Approach to Reading Difficulties
- Reactions of Students to Special Classes
- Physical Fitness Testing of Two Generations

published by
CALIFORNIA TEACHERS ASSOCIATION
1705 Murchison Drive Burlingame California

CALIFORNIA JOURNAL OF EDUCATIONAL RESEARCH

Published by the CALIFORNIA TEACHERS ASSOCIATION for the CALIFORNIA ADVISORY COUNCIL ON EDUCATIONAL RESEARCH

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Published at Burlingame five times a year: January, March, May, September, and November. Subscription price: $6.00 per year; single copies, $1.50. All correspondence should be directed to: CALIFORNIA JOURNAL OF EDUCATIONAL RESEARCH, 1705 Murchison Drive, Burlingame, California. Checks should be made payable to the CALIFORNIA TEACHERS ASSOCIATION.

Certain articles in this *Journal* are listed in Psychological Abstracts.

Member of the Educational Press Association of America

Entered as second class matter at the Post Office at Burlingame, California

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CALIFORNIA JOURNAL OF EDUCATIONAL RESEARCH

Volume X NOVEMBER, 1959 Number 5

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THE EDITORS SAY:

Pursuit of Excellence—An Elusive Goal

"The Pursuit of Excellence" was carefully selected as the theme for the Eleventh Annual Research Conference. In fact, it was chosen after many thoughtful deliberations. The topic is especially appropriate, for it has attracted a great deal of public attention since the release of the famous "Rockefeller Report" on Education. Members of the Advisory Council shared the concerns aroused by this publication.

Theoretically, everyone believes in excellence; but excellence, particularly in education, is an elusive goal. Excellence can occur only when an unique combination of talent and motivation is placed within a context of values. These values are necessary and important, for they are the catalytic forces in education. Values, as everyone recognizes, are those things on which we place our emphases, and the products of our public schools, namely the students, are often accused of placing their values on mundane affairs. It has been said that our youngsters are interested primarily in material gains; they are incapable of devotion, courage, or achieving any meaning to their lives. In their minds, security, comfort, pleasure, and luxury overbalance social, religious, and ethical responsibilities.

Yet, education cannot progress unless deep values support it.

The educational system must instill in the student the necessary zeal to pursue excellence. The pursuit of excellence must not be permitted to become a latent force. Literally, the future of America depends upon the kinds of excellence which schools can inspire.

Excellence should be broad. Pupils must be able to read better; they must have information at their command; they must have complete understandings. But, as important as basic skills are, excellence does not mean improved methods of instruction alone. Somehow, students must be infused with a set of values which they hold dear. As the "Rockefeller Report" indicates, "Individuals must be free and morally responsible—the two are inseparable." Toleration of differing values is built upon a base of moral commitments, but not on flaccid indifference.

To obtain excellence education must have purpose and meaning. We must decide what these shall be. Then, as Thornton Wilder says, "we should be willing to fight for these purposes and meanings." J.H.B.

A Psychometric Study of Student Attitudes As a Measure of Academic Motivation

J. Kenneth Rowland

The purpose of this study was to determine whether or not students will give an indication of the strength of their academic motivation through the attitudes and opinions they express. Evaluation of the study was based on the null hypothesis that the product-moment coefficient of correlation between academic achievement and the score made on an inventory of academic motivation will be no higher than could be expected according to chance. Before the hypothesis could be tested it was necessary to select an instrument to measure the attitudes and opinions of the students involved in this study.

Procedure

After a careful examination of the literature covering similar studies it was decided that it would be necessary to design an academic motivation inventory which would be suited to the needs of this investigation. Personal interviews were conducted with a number of teachers, counselors, and students at both the high school and college level. During the interview each person was requested to respond to the question, "*What behavior patterns, attitudes, and opinions seem to differentiate students who achieve academic success from those who fail to achieve?*" The results of more than 100 interviews were tabulated to determine if there was any uniformity of response. The responses were stated in many ways, but the factors which were most frequently mentioned could be grouped under five main headings. These were:

1. Value structure and conformity to the peer group.
2. Parental expectation, encouragement, and understanding.

J. Kenneth Rowland is Dean of Student Personnel Services at Modesto Junior College, a position he has held since 1955. Prior to that time he was Registrar and Director of Guidance at the same college since 1950. Dr. Rowland received his doctor of education degree at the College of the Pacific in 1958. His article is based on his doctoral dissertation.

3. Attitude toward teachers and respect for the requirements of the school.
4. Relative orientation to vocational or educational objective.
5. Regularity of attendance, work habits, and general dependability.

From the suggestions received during the interviews, questions were written which attempted to secure a measure of students' attitudes or opinions based on these five general areas. The questions were divided into two groups in an attempt to elicit student reaction from two points of view. The questions which were used in Part I of the "Academic Motivation Inventory" required the student to react to a statement about students in general. The questions could be answered by checking "Agree," "Disagree," or "No Opinion." It was hoped that asking students to evaluate the opinions and attitudes of their peers might be a way to discover their own feelings on these items. The questions used in Part II of the inventory ask the student to indicate the relative frequency with which the statement applies to himself. The questions may be answered by checking the appropriate position on a five-point scale ranging from "Always" to "Never." An experimental copy of the "Academic Motivation Inventory" was prepared and administered on a trial basis to test the vocabulary and organization used. On the basis of information obtained from the preliminary testing, a number of questions were revised and a third section of open-end or essay type questions was added.

The revised form of the "Academic Motivation Inventory" was administered to the entering freshmen at Modesto Junior College during the fall semester of 1955 as a part of the freshman orientation testing program. The other tests used in the freshman testing program included: the *American Council on Education Psychological Examination* (hereafter designated as the ACE), the *Army General Classification Test*, the *Cooperative English Test*, the *Cooperative General Achievement Tests* as measures of aptitude and academic achievement, and the *Kuder Vocational Preference Record* as a measure of vocational interest.

Preparation of Scoring Keys for the Academic Motivation Inventory

After the close of the 1955 fall semester the grade-point average was computed for each student who had completed the semester with more than a half-time program of studies. At the time this study was made the college was using a system of assigning grade-points or honor-points which gave a value of three points for each unit of work with a grade of "A," two points for each unit of work with a grade of "B," one point for each unit of work with a grade of "C," and no points for work of less than "C" grade.

The first semester grade-point average was used as a measure of the level of academic achievement of each student. The score made on the

ACE was used as a measure of the academic potential of each student. It is recognized that both these measures are far from perfect, but their use did not serve as a serious limitation to the study. One group of students was identified as achievers and a second group was identified as non-achievers on the basis of three separate samples drawn at random from the total group with no student being included in more than one sample. The composition of each sample group may be seen in Table I, which indicates the number of cases in each sample and the criterion for selection.

TABLE I

Sample Groups on Which Scoring Keys for Academic Motivation Inventory Were Developed

	"A" (Achievers)	*"B" (Non-Achievers)*
Sample I Grade-point average 1.00 to 1.49	N = 100 ACE Score 85 or less	N = 100 ACE Score 101 to 160
Sample II ACE Score not considered	N = 100 GPA 2.00 to 2.99	N = 100 GPA 0.50 or less
Sample III ACE Score 90 to 120	N = 67 GPA 1.75 or more	N = 66 GPA 0.90 or less

The responses of each group to the questions on the "Academic Motivation Inventory" were item analyzed to establish the scoring key. Answers which were selected more frequently by the achievers than by the non-achievers were counted as "Right" while answers which were selected more frequently by the non-achievers than by the achievers were counted as "Wrong." Answers which were marked with nearly equal frequency by both groups were eliminated from the scoring.

There were no questions which made an absolute distinction between the achievers and the non-achievers, but the total pattern of responses did show a difference between the two groups. After the scoring key had been developed on the basis of these sample groups, it was used to score the papers of the entire class of 845 students. Because the scoring key was set up to add points for "Right" answers and to subtract points for "Wrong" answers, it was to be expected that some students would have a minus score on the inventory. To avoid the necessity of working with minus scores in the analysis of the data, it was necessary to convert the raw scores into a standard score. The standard score selected was the T score which assigns

a score of 50 to the mean of the raw score distribution and is scaled in each direction from the mean in units of 0.1 sigma. The grade-point averages and raw scores on the other tests used in the freshman orientation program were likewise converted to T scores to make possible a direct comparison of scores using an equal-interval scale.

Analysis of Data

When the T score of the grade-point average for each student in the class of 1955 was compared with his T score on the ACE, the Pearson *r* was found to be .41 with a standard error of .0286. When the T score of the grade-point average was compared with the T score earned on the "Academic Motivation Inventory," the Pearson *r* was found to be .52 with a standard error of .0251. In terms of the prognosis of academic achievement, as it is measured by the grade-point average, it would appear that the "Academic Motivation Inventory" had a higher correlation with achievement than did the ACE, but the question remained whether the inventory could add to the effectiveness of the freshman test battery.

The "Academic Motivation Inventory" was compared with the scores on the ACE and the Pearson *r* was found to be .24, with a standard error of .0324, which seemed to indicate that the inventory measured some of the factors which were not measured by the ACE and therefore might make a contribution to the total battery of freshman tests. When a multiple correlation was computed to compare the relationship between the grade-point average, the ACE scores, and scores on the "Academic Motivation Inventory," it was found that the multiple *r* was .59, with a standard error of .0141.

A validation study was made with the class entering the Modesto Junior College in the fall of 1956 to compare with the results of the 1955 study. The complete testing program was repeated without changing any of the test instruments, scoring keys, or statistical methods. As nearly as could be determined, the class of 1956 was comparable with the class of 1955 in ability, high school background, home environment, and vocational objectives.

There were 674 individuals in the entering class of 1956 for whom correlation studies were made. When their first semester grade-point averages were compared with their scores on the "Academic Motivation Inventory," the Pearson *r* was found to be .46, with a standard error of .0303. When their grade-point averages were compared with their scores on the ACE, the Pearson *r* was found to be .40, with a standard error of .0327. A multiple correlation was computed to find the relationship between the grade-point average, the scores on the ACE, and the scores on the "Academic Motivation Inventory." For the class of 1956 the multiple *r* was found to be .53, with a standard error of .0183.

It had been assumed that the coefficient of correlation between the grade-point average and the score on the inventory would not be as high for the class of 1956 as it had been for the class of 1955, since the scoring key for the "Academic Motivation Inventory" had been developed on the responses of sample groups selected from the class of 1955. This assumption was borne out by the validation study conducted with the class of 1956. Table II shows the comparative correlation coefficients for the two years. An analysis of the data obtained indicated that this difference was not significant beyond the 1 per cent level of confidence.

TABLE II

Validation Studies With Class of 1956 as Compared With Class of 1955

Instruments Which Were Compared	*Class 1955*		*Class 1956*	
	r	*S.E.*	*r*	*S.E.*
GPA with ACE	.41	.0286	.40	.0327
GPA with Motivation Inventory	.52	.0251	.46	.0303
ACE with Motivation Inventory	.24	.0324	.30	.0354
Multiple Correlation GPA with ACE and Motivation Inventory	.59	.0141	.53	.0183
N=	845		674	

Conclusions

A coefficient of correlation for two variables with 500 degrees of freedom would be significant at the 1 per cent level of confidence if it exceeded an *r* of .115. The coefficient of correlation between the "Academic Motivation Inventory" and first semester grades was found to be .52 for the class of 1955 and .46 for the class of 1956.

From the evidence obtained it can be concluded that the null hypothesis has been disproved. The correlation between academic achievement and scores on the "Academic Motivation Inventory" is higher than could be expected by chance and, therefore, it is possible to construct a paper-and-pencil measure of academic motivation based on the opinions and attitudes of students.

The use of such an instrument will add to the total evaluation of the student and will provide an additional tool for the counselor to use in helping the student make the best use of his educational potential.

The Responses of Average and Gifted Students On the Group Rorschach Test

JANET E. BLECKNER

In September 1957, a program for the education of gifted adolescents was inaugurated in a Union High School District in the San Francisco Bay Area. From seven elementary school districts a group of about 144 youngsters was selected to take part in an enriched and accelerated offering during the freshman year. From scores on the screening test, the California Short Form Test of Mental Maturity (Intermediate Form), about 36 of the highest were chosen to take part in the program in each of the four high schools.

In the year that followed, the new program was subjected to the critical examination of the sponsoring administration and faculty. Noticeably, the youngsters did not seem to live up to their intellectual promise in terms of their classroom output and achievement. Teachers in the program became concerned, wondering what the trouble might be, whether in the youngsters themselves or in the teaching methods employed. Many of them, indeed, vociferously protested the listed I.Q. scores and were certain they could not be correct.

As psychologist for the high school district, the writer was quite confident that the I.Q. scores were as accurate as could be derived from any group test and that individual tests would only result in slightly higher scores. The question, then, revolved around any possible personality differences in gifted groups as a whole which might lead to marked alterations in teaching methods.

Purpose

The purpose of this study was to determine if there were any measurable differences in personality between the children termed "gifted" and those termed "average." A pilot study matching 24 gifted with 24 average

Janet E. Bleckner is a psychologist with the Hayward Union High School District, a post she has held for five years. Dr. Bleckner served the Berkeley public schools in the same capacity for two years, was a clinical psychologist with San Francisco's Health Department and Juvenile Court for several years, and also taught in that city's high schools for two years. Dr. Bleckner obtained her doctor of philosophy degree in 1952 from the University of California, Berkeley.

children, performed in the fall of 1957, suggested that such differences might exist. In the earlier study the writer found evidence to suggest that the gifted group showed greater organizational ability, better ability to handle environmental emotional stimulation, and greater versatility of thought. Specifically, the writer attempted to test the hypotheses seemingly justified by the earlier study. Would there prove to be differences in the personality characteristics of the two groups as measured by the Group Rorschach Test?

Background

The various people who have investigated this problem have disagreed as to the nature and degree of relationship which might exist between intelligence and personality as measured by the Rorschach test. Since we may assume that intelligence is only one factor in academic success, we must interest ourselves also in studies of academic achievement and personality.

Cronbach's study (4) of 200 very young students at the University of Chicago showed, among other things, that no Rorschach sign could distinguish under or overachievers, and he termed relationships between Rorschach scores and ACE I.Q.'s insignificant.

Tucker (15) studied the movement responses and found no significant correlation with the I.Q.'s of neurotic male veterans.

Liefmann (9) categorically insisted that even the quantitative formulae of the Rorschach are inaccurate indices of intelligence and that subjective judgments of the over-all quality of an individual test are more adequate as estimations of the intellect.

On the other hand, Lotsof's (10) data indicated that the Rorschach determinants are related to language measures. The more verbal of his 30 subjects gave a greater number of responses, of shading and vista responses, and of human movement responses, but a lower number of animal responses.

Abrams (1) created a formula for the prediction of I.Q. from the Rorschach as follows:

$$\times = \frac{2a + 17b + 9c + 2d + 76}{10}$$

a = Ror F +%
b = #M
c = #W
d = #R
X = W-B Full Scale I.Q.

However, Fielding & Brown (5) tested the formula on psychotic and

psychoneurotic patients and found it effective only for I.Q.'s between 90 and 110.

Lotsof (11) reported most recently in the *Journal of Projective Techniques* a factor analysis of the Wechsler Intelligence Scale for Children and Rorschach and concluded that any attempt of a clinician to use individual variables of the Rorschach to predict intellectual performance would result in inaccurate predictions.

Spiegelmann (13) pointed out, in discussing the sign approach, that "a high W% might be produced by a subject with a cortical lesion which reduced his intellectual flexibility, by a gifted person with a rich imagination, by a person with mediocre intelligence who does not know the limits of his reasoning power, by children, by people with undifferentiated perception." He continues: "Although all of Rorschach's factors have shown significant correlations with psychometric I.Q. meaures in some researches, in others all have failed to do so. Where significant correlations are found, they are exclusively with . . . information, similarity, vocabulary and comprehension . . . Lack of adequate correlation may indicate that the factors are inadequate, not that no relationship exists."

Armitage, Greenberg, Pearl, Berger, and Daston (2) found that clinicians judge protocols accurately for intelligence but fail when they attempt to use the sign approach.

Trier (14) used 12 experienced clinicians as judges to estimate intelligence from Rorschach protocols. His results indicated that I.Q. can be estimated as accurately from the vocabulary used in the protocol as by any other current approach.

The literature apparently does not include studies utilizing known gifted groups, and it would appear that such a division of subjects is pertinent to the problem of Rorschach personality differences. If, as the pilot study suggested, there were demonstrable differences, then it would be possible to say that gifted individuals are qualitatively, as well as quantitatively, different from those of average intelligence. Moreover, the nature of any demonstrable differences would add to those estimators of intelligence which have traditionally been used in the scoring and interpretive process.

Subjects

Taking part in the study were 100 "gifted" and 87 "average" youngsters. It should at this point be stated that our definition of "gifted" obviously does not agree with that of many other school systems, in that we did not use an arbitrary cut-off point of 130 or 140, as many districts do, so that our gifted group included almost half their number with I.Q.'s really in the very superior, rather than gifted, range. The gifted 100 were those of the 144 who had not taken part in the pilot study. The average group were

children selected randomly from the other freshman classes among those whose reported California Test of Mental Maturity scores were between 90 and 110. The gifted groups on California Test of Mental Maturity scores ranged between 123 and 154. Of this group the distribution of scores was as follows:

140 & over — 6

135 - 139 — 17

130 - 134 — 29

125 - 129 — 26

120 - 124 — 21

There were 51 boys and 49 girls in the gifted group; 50 boys and 37 girls in the average group.

Method and Procedure

The group method of administration of the Rorschach was used in the study, according to the Harrower-Erickson instructions (6), with the change of timing from three to two minutes in accord with the writer's procedure in previous studies with the same test (3). The administration was performed in six different sessions, and the group taking the test at each session was so disposed that students were seated from 8 to 30 feet from the projection screen. With an adolescent group it is sometimes necessary to repeat the same explanations, as in the directions for the inquiry recording, two or three times, and this seemed to the writer to be true for the gifted, as well as the average groups.

Scoring on all protocols was by the Klopfer method (8), and the writer experienced very little difficulty determining what the respondent meant, whether, for example, the response was one of form alone or of form accompanied by movement.

The raw number of responses in each category was listed on master sheets, and then the total number of responses of the group in each scoring category was rendered into a proportion of the total responses made by that group. The gifted group gave a total of 1892 responses and the control group 2089, a fact which was contrary to expectations. Thus, for example, since the gifted group gave 1024 W responses and 187 W$^-$ responses, the proportions noted were .541 W responses and .099 W$^-$ responses. In contrast, the control group's 908 W responses amounted to .435 of their total.

A critical ratio of the significance of any difference was then derived for each scoring category, using the formula for the standard error of a proportion.

Results

The results obtained are shown in Table I. Inspection shows no single critical ratio approaching the 5 per cent level of confidence. One must conclude, therefore, that the results of this study show no significant differences in the categories of Rorschach responses when average and gifted groups are compared. It would appear, therefore, that these results are in substantial agreement with those of previous studies.

TABLE I

Critical Ratios of Differences Between Average and Gifted Groups in Rorschach Scoring Categories

Location		*Determinants*		*Content*	
W	1.46	M	1.3	HH	1.32
W-	.32	FM	.18	(H)	.30
D	1.65	m	.31	Hd	.39
d	.29	k	.00	(Hd)	.08
Dd	.30	K	.08	A	1.2
S	.03	FK	.07	Ad	.05
		F	1.95	Aobj	.27
		Fc	.15	At	.12
		c,cF	.03	Obj	1.90
		C′	.17	N	.14
		FC	1.5	Geog	.12
Pop.	.26	CF	.07	Pl	.46
*Natives	.38	C	.04	Fire	.19
				Clouds	.00
				Blood	.00
				Arch	.00
				Art	.00
				Food	.00
				Misc.	.21

***This content category was arbitrarily selected because inspection suggested the gifted might in this way be showing feelings of distance from or depreciation of other people. Statistically, however, the suggestion was not supported.**

Implications

On the basis of his longitudinal studies of gifted individuals, Terman has suggested the possibility that they are less given to neurosis and psychosis, are less criminally inclined, have less need of psychiatric attention, than individuals of average intelligence (12). If this is true we might expect our average group to demonstrate on the Rorschach FM > M, CF + C > FC, a greater amount of K and other anxiety indicators, thus suggesting a less healthy state of adjustment. For this study, this does not

appear to be true. If, then, the descriptions of basic personality rendered by Rorschach for the gifted as a group do not differ from those of the average as a group, and yet there is a difference in the incidence of problems meriting referral for psychiatric or legal study, the difference might be one of a decreased tendency by very bright individuals to act out their problems.

Giftedness, as we presently measure it, largely consists of very superior verbal ability. In the person of average intelligence we have an individual of lower verbal ability. In a society in which we stress communication, is it possible that the average person, with less developed powers of communication and less potent perceptive aids, might thus have a smaller gestalt from which to draw appropriate responses to stress situations? This would imply that gifted people have the same life conflicts presented to them, but have wider varieties of responses to stress because their higher verbal ability has led to more exchange of ideas and exposure to the ideas of others.

Manifestly, the less bright individual usually, for example, holds a job with lesser income and is thus subjected to greater financial problems, but here the theory is that if he were more verbal, he would have acquired a better job and would have reduced his financial problems. Thus, different degrees of even the severity of life problems may themselves be caused by differences in intellect or verbal ability.

Both gifted and average people attempt to manipulate their environments better to serve their needs. They are prevented from total manipulation to some degree by the counter-manipulations of other individuals and by authorities in society whose function is the protection of the rights of many. The authority figures, such as teachers, legal authorities, and ministers, are usually individuals in the top quartile in intelligence. We have, then, a situation in which people of average intelligence are being socially educated by and need to submit to people whose verbal communication is better, thus constituting a highly frustrating state of affairs. It is possible to envision a reaction to this frustration in either overt hostility, a condition resulting in reprimand and repudiation by society, or in repressed hostility, which can be followed by neurosis and psychosis. The individual with greater verbal ability is generally more successful in attaining satisfaction of his needs or in sublimating them, conditions frequently resulting in better adjustment to society.

To some degree, the general thesis of Redlich's "Social Class and Mental Illness" (7) supports this point of view. The intelligent psychopath, for example, manages to keep himself out of jail. However, the expression of this point of view is not intended to neglect the empirical evidence submitted by the picture of highly verbal people who, unable to handle their conflicts, are seeking help from psychiatrists. The famous Loeb and Leopold are examples of the unconscious conflicts which compel people to behave in a socially inept or attacking manner. One may thus postulate a kind of

normal curve, for the central 67 per cent of which this theory operates, that of better verbal ability affecting behavior, for the bottom 16 per cent of which the superego controls are dominant, and for the top 16 per cent of which the unconscious controls behavior.

If any of these hypotheses can be shown in other researches to have validity, then it is possible to suggest that a change in our educational methods might take the direction of finding less verbal ways to teach average and below average children how to deal with the problems and frustrations they encounter in daily life.

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Athletic and Physical Experiences of Fathers And Sons who Participated in Physical Fitness Testing at Pomona College, 1925 – 1959

BRYANT J. CRATTY

During the past 34 years a series of physical fitness tests have been administered to the male freshmen upon entering Pomona College in Claremont, California. The Test Battery consisted of chins, standing fence-vault, running broadjump, and 100-yard run. An individual had to achieve a passing standard in each test to pass the battery.

In a previous study by the author, which analyzed the scores achieved by 24 fathers and their sons (2), it was found that a much larger percentage of the tests were passed by the fathers than by their sons, and the scores of the fathers were significantly higher in three out of four of the tests. There was also found to be a positive correlation between father and son performance in the broadjump (+.86), and in the 100-yard run (+.59).

As a follow-up to this investigation, a questionnaire was prepared and sent to the 48 subjects involved. The purposes of this inquiry were: (1) To determine the extent of the respondents' backgrounds in high school physical education and athletics; (2) To evaluate their opinions of physical education in our schools; and (3) To assess various other factors which may have influenced performance of the tests.

Findings

The data from the inquiry forms were utilized in two ways: (1) A comparison was made of the responses of the fathers to those of their sons; and (2) Responses of those passing the battery were compared to the responses of those failing, regardless of generation. The statements contained in the

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questionnaire were prepared using empirical judgment. Forty of the forty-eight subjects returned the inquiry form. The findings are presented in Table I.

TABLE I

Summary of Questionnaire Data

	Fathers	*Sons*	*Passing*	*Failing*
Average height and weight of the respondents at the time the tests were taken	5'10" 151 lbs.	5'11¾" 164 lbs.	5'11" 156 lbs.	5'11" 165 lbs.
Percentage attempting to *excel*, rather than merely attempting to pass the tests	61%	59%	86%	33%
Percentage having high school physical education experience	83	100	100	75
Percentage who participated in high school athletics	78	73	93	42
Percentage who engaged in manual labor during high school	67	82	77	42
Average age at which respondent first had access to an automobile	15.6 yrs.	16 yrs.	16 yrs.	16 yrs.
Opinion of Physical Education*	2.2	1.6	2.0	2.4

*The respondents were asked to check the *one* statement which most nearly expressed their opinion of physical education in our schools.

1. It is a vital part of the educational program, with values for all.
2. The skills I learned were helpful to me in later life.
3. The classes always enabled me to keep physically fit.
4. Sometimes the classes were good and sometimes meaningless.
5. In most cases my physical education class was a waste of time.
6. The time given to physical education should be spent on more academic subjects.

The responses were rated on a 1-6 point scale (1—most favorable, 6—least favorable). The figures in the table were the averages.

Implications of the Findings

Height and Weight. It will be noted that, as a group, the less proficient sons are taller and heavier than were their fathers. Those failing the tests, although recording the same average height, were about nine pounds heavier than those passing the battery.

Relative to this investigation, these data seem to indicate that there may be a relationship between body-build and performance. The testing program at Pomona College would probably be more meaningful if the scoring system were adapted for different body-types, as has been suggested in research on physical fitness testing by Cozens (1), Cureton (4, 5), and others.

Passing or attempting to excel. Although the stated question did not specify whether "to excel" meant in relationship to established standards or to the individual's own potential, a significant difference in percentage may be noted between the passing and failing groups. This finding would probably indicate that those lower in proficiency were realistic enough to realize their ineptitude, and were merely trying to pass the battery and thus avoid the special classes to which failures were assigned.

Whether attitude is indicated by the responses to this question is difficult to ascertain. Whether the individual's motivation to merely pass or to excel may have influenced his performance is even more difficult to determine.

Participation in High School Athletics and Physical Education. It will be noted that fewer of the more proficient fathers had had high school physical education, while the less able sons had all the "advantage" of such training. This may have been due to the fact that physical education was sometimes not compulsory 32 years ago as it usually is today. Those men failing were noted to have had fewer physical education experiences than did those passing the battery.

Very significant differences may be noted when comparing the record of the participation in high school athletic programs between the passing and failing groups. The cause-or-effect question may be considered here, as indeed it may be argued throughout the investigation. **To what extent did participation in high school athletics influence test performance?** vs. **To what extent did a vigorous constitution influence both the test performance and the individual's ability to participate in high school athletics?** The ability of an individual to "make the team" would vary to a marked degree depending upon the size of the school and the number of sports offered in the program, factors which must be kept in mind when considering these findings.

The importance of high school athletic participation in test performance may be further questioned when it is noted that a greater percentage of the less proficient sons had athletic experience than did their fathers. The influence of high school athletics on general fitness measures is treated with greater specificity in a recent study by McCammon and Strauss (8).

Opinion toward Physical Education. Although it will be noted that an exact five-point scale of negative-to-positive opinion has not been constructed, as suggested by Likert (7) and others, a general degree of acceptance or rejection of physical education may be indicated by checking statements one, four, five, and six. Statements two and three were concerned with specific objectives, as opposed to unqualified acceptance of the total program.

The fathers seemed to be more critical of physical education than were their sons. The generally critical attitude of the fathers was amplified in

the number of negative comments elicited from them, which ranged from observations concerning teaching methods to those statements concerned with program content.

The generally favorable opinions held by the sons probably indicates that they were getting in their physical education programs the activities they **liked,** but whether they had received the type of program they **needed** is questionable upon reviewing their ability scores.

The general favorable opinion usually held by individuals in activities in which they achieve success is noted when comparing the responses of those passing to the answers of those failing. All educators should be cognizant of the principle illustrated here, i.e., some measure of success is imperative for the development of positive attitudes.

If, as Thorndike points out (11), an action may initiate an attitude, initial success should be realized by the student to promote favorable attitudes, which will (or may) carry over to other phases of the same subject area in which initial success is not achievable.

Participation in Manual Labor. Although sons have participated in manual labor to a slightly larger percentage than did their fathers, a real difference is noted when comparing the passing and failing groups.

Again the "chicken-or-egg" question arises, i.e., does an ability to pass physical proficiency tests come from participation in manual labor or does a vigorous, active boy seek and/or qualify for part-time work of a physical nature?

Age at which respondents had access to a car. No significant differences were noted in the average ages at which the respondents first had access to an automobile. This question was included in order to determine if the "gasoline-legs" felt by some to be characteristic of modern youth was a factor worthy of consideration in this investigation.

Conclusions

As a result of this study the following conclusions were formulated, based on the data available:

1. Those passing the tests were, on the average, lighter in body-weight; had usually participated in high school athletics; had engaged in manual labor as a part-time high school job; and held a slightly higher opinion of physical education than did those who failed the tests.

2. The fathers, as a group, were generally shorter and lighter in weight, and had participated slightly less in high school athletics, in high school physical education programs, and in manual labor than had their sons. In addition, the fathers held a lower opinion of the physical education program than did the younger generation.

Recommendations

1. The relationship of the high school physical education program to the physical fitness of young men entering college could be ascertained with greater validity through the application of an increased number of questionnaires to the men who have taken the ability tests at Pomona College during the past 34 years.

2. Re-examination of passing standards for each test could take place, perhaps considering the body-builds of the subjects.

3. Additional father-son studies of this nature could be carried out at universities and colleges that conducted testing programs of this type a generation ago by comparing this data to that which could be collected by the testing of those of the second generation who are surely attending these institutions at the present time.

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A Perceptual Approach to Early Reading Difficulties

CALVIN D. CATTERALL AND PHILLIP WEISE

Many instructional approaches to reading have been utilized and much effort has been expended throughout the years by educators, yet a certain percentage of children with normal ability continue to experience reading difficulties. In school, these children are not only academic problems, but, if not given early help, frequently develop emotional problems.

Two major theories have developed to explain the causative factors involved in reading disorders—procedural (11, 15, 17, 33) and psychological (2, 10, 22, 30). Also, programs to alleviate the problem have been designed. Procedural theorists have suggested that reading failures are mainly due to inadequate or inappropriate instructional techniques and inferior instructional materials. Under this theoretical heading would be included such remedial techniques as special attention to the grouping of children according to their reading level, visual and auditory analysis techniques, the use of remedial teachers, a large number of public and private reading clinics, and the use of numerous mechanical devices. The second theoretical approach designated the major cause of reading difficulties to be disturbed interpersonal relationships. Remedial programs built upon this theoretical framework emphasize a psychological approach including such factors as providing a warm, accepting relationship with the child, thereby helping him to relax and to gain sufficient confidence in himself to begin making progress in the reading task.

Recently, however, a group of professional workers from a variety of disciplines have postulated other theories to explain reading difficulties (5, 6, 9, 18, 24, 26). These theoretical approaches claim that a fairly large percentage of reading problems are caused by disturbances in the perceptual, maturational, physiological development, i.e., in the complex inter-

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relationship between the physical factors of motor development and visual-auditory perception. A synthesis of these viewpoints which the authors of this paper wish to make indicates that they do not necessarily contradict or supersede the procedural and psychological theories, both of which have merit. It is felt, rather, that reading problems are more likely to occur when there is a disturbance in this perceptual area, no matter what approach is used. Further, it has been frequently observed that the non-reading child continually subjected to failure and/or censure will often develop rather marked secondary emotional problems.

A Perceptual Approach to Reading

At this point, it is important that we define briefly the term "perception." In this presentation, perception is considered to be a process—never static—in which we integrate current sensory input into the organism in light of past sensory experiences. Current psychological research by such workers as Blake and Ramsey (3), Bruner and Goodman (4), and Witkin (32) is demonstrating that perception tends to be selective according to one's past experiences and to one's basic emotional needs. With this brief definition then, let's look at the evidence we do have that perceptual skills play a vital role in the beginning processes of reading. Because vision plays such an important role in perception and lends itself better to research techniques than do other sensory modalities, most of the work has been done in this area.

One study was directed to this problem by Leo Manas, O.D., of the Illinois College of Optometry; Dorothy Simpson, Curriculum Director of the Lafayette, Indiana, Schools, together with N. C. Kephardt, Department of Psychology, Purdue University (25). These people studied the relationship between measures of visual skill and school achievement at the kindergarten level. Children were rated on a five-point scale on some 20 visual skills, including four which involve motor control of the eyes (binocular rotation, monocular rotation, saccadic fixation, and near-to-far fixation). These ratings were then correlated with the total score obtained on the Metropolitan Reading Tests. The product-moment correlation obtained with one group of 52 kindergartners was .456 which proved to be significant at the .001 level. A retest on another group of 66 kindergartners produced an r of .447, also significant at the .001 per cent level. About the research, Dr. Kephardt comments: **"It is felt that the results of this study demonstrate rather strikingly a substantial relationship between visual skills and school achievement at the kindergarten level. Of particular significance is the marked contribution made by the four measures of motor eye movements. Since at this age the psychomotor skills are easily trainable, these data suggest that such training would be helpful in increasing achievement among these young children"** (25).

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Early in 1953, Kephardt (25) did another study, this time on 2,200

school children in grades three through twelve. When he compared the scores on tests of visual skills with actual school achievement, a summary of his findings indicated that a direct relationship exists between skill and school performance—"children who see well, work well, and those who can't see well, do poorly." Once again, he points out that visual skills can be improved, and this improvement should lead to better school achievement.

More recently, R. G. Lowder (19) analyzed the reproduction of seven progressively more difficult geometric forms made by 1,510 children representing the total school enrollment in grades one through three in the Winter Haven, Florida, public schools. The seven forms used in this study were a circle, cross, square, triangle, dissected rectangle, vertical diamond and horizontal diamond. Utilizing the previous work done by Bender (1) Gesell (12), Goodenough (16) and Terman (29), and others, a scoring system was developed and each child's score was correlated with a teacher's general judgment of the child's scholastic achievement, i.e., "High," "Medium," and "Low." The resultant r obtained was .52, which proved to be beyond the .001 level of significance. Once again, therefore, we would appear to have evidence that visual skills are related in a very direct way to school achievement.

Following this pioneering work, Simpson, Director of Curriculum of the Lafayette, Indiana, Schools, under the guidance of Kephardt, is currently conducting an extensive research program in the Lafayette Schools. Working on the hypothesis that the reading readiness of kindergarten children can be significantly improved by developmental, perceptual-motor training, they have instigated a visual program with special emphasis on the training of eye-movements, using half of the total kindergarten population as an experimental group and the other half as control. A longitudinal study has been planned to see whether or not any differences can be found in the actual achievement of these two groups. Even though the study is already in its second year, it is too early, at present, to announce any results of this work. Preliminary results indicate, however, that test-retest changes on standardized reading tests show that the experimental group is advancing more rapidly than the control group.

These findings may point to the need for a re-examination of the continued practice of starting to teach children to read when they have attained a mental age of approximately 6½ years (23). Certainly, necessary language skills, thought concepts, and visual acuity are developed long before the child reaches this age. The visual-skills study mentioned above tends to suggest that the 6½-year level has not proven to be a rather practical time at which to instigate specific reading activities primarily because of maturation in mental age. Instead, this work tends to indicate that it is at this time that the child has learned, through experience, to control the movements of the eye completely enough to get the consistency of input necessary for reading. Further research appears to be needed in this important area.

Screening Techniques

No single criterion has been completely successful for determining the best time for the introduction of formal reading. Research is pointing to the fact that there must be a social readiness, an emotional readiness, and, even more recently, evidence indicates the need of a perceptual-maturational readiness for reading (8, 9, 19, 25).

One cannot help but be aware of the social emotional factors and the experiential background necessary in the reading process. These factors have been dealt with extensively by both psychologists and educators and are an established part of our modern curriculum in the elementary school. Less attention, however, has been paid to the perceptual-motor factors implicit in the reading process. While it is true that some modern reading-programs do advocate certain perceptual training procedures and that many successful teachers have developed such techniques on their own, it is also true that this approach is typically relegated to a position of secondary importance. Teachers frequently do not have a comprehensive enough theoretical approach which would integrate all of the multitudinous parts of their developmental reading program. How many teachers, for instance, understand how their developmental program in physical coordination relates to the reading program?

Since perceptual skills are an important aspect of the total maturation of the organism needed for reading, what diagnostic devices might be utilized for screening out children who are not ready for a formal reading program?

Reference has already been made to Lowder's (19) study utilizing the Winter Haven forms (7) which demonstrated that a scoring system developed for use with these forms was able to predict future reading performance. This study would indicate that a perceptual test such as this or the Bender-Gestalt (1) drawings should have a primary place in a reading-readiness screening program.

Katrina De Hirsch, at the Pediatric Language Disorder Clinic, Columbia Presbyterian Medical Center in New York, has developed a 40 to 45 minute series of screening devices and procedures designed to discover potential reading difficulties among six-year-olds. Some of these techniques with their rationale are as follows:

1. An evaluation of disturbances in the child's mobility, since movement requires patterning and this patterning is an essential part of the reading process.

2. The Bender-Gestalt Test (1), to evaluate visual-motor functioning. This measure would relate to the Gesell Scale (7) already mentioned.

3. The Goodenough Draw-a-Man Test, which is used to assess the child's knowledge about the parts of his own body and his awareness of their interrelationships.

4. Tests of strength, precision, and speed of laterality.

5. Evaluation of the child's concepts of left and right, up and down, and so forth.

6. A modification of Head's "Finger to Eye" Test which requires the child to imitate lateral movements made by the examiner sitting at the child's side. The movements are seen in the reflection of a mirror.

7. The Columbia Mental Maturity Test, which is used as a measure of categorical behavior.

8. The Figure Background tests described by Strauss and Lehtinen in their book on brain-injured children (28).

De Hirsch states, "Basic to reading, of course, is the child's ability to cope with perceptual organization. Most of our tests are designed to measure the child's ability, to pattern, structuralize, and adequately respond to the endless stream of stimuli to which he is exposed at every moment. Maturation is largely a process of integration and differentiation. The child of six and older whose perceptual, motor, visuo-motor and conceptual performance is still relatively primitive, the child who has trouble with structuralization of behavior patterns, is the one who is apt to run into difficulties when he is exposed to reading, which requires the smooth interplay of many facets of behavior" (9).

Instructional Techniques

In the past, various instructional techniques have been utilized to alleviate reading failures. Some of the techniques for remediation are:

1. The kinesthetic approach, most closely associated with Grace Fernald (11), and the Reading Clinic at the University of California at Los Angeles.

2. Anna Gillingham (15), who, together with S. T. Orton (24), a neurologist, developed an entire course of study for the instruction of reading. This technique differs from others by its rather rigid, well-defined, step-by-step building up of visual auditory, and kinesthetic cues to reading.

3. The educational approach which emphasizes the importance of finding the child's level of reading skill and in the application of psychological understandings to the reading process (2).

4. The shift from the previously traditional phonetic-atomistic method of teaching reading to the current sight-vocabulary approach, which was greatly influenced by the Gestalt "wholistic" approach to the learning process.

5. Such mechanical devices as tachistoscopes, flashmeters, and pacing devices which, although usually considered as remedial techniques, have been proposed by some as basic to a total reading program.

6. Even more recently, the perceptual approach (6, 9, 14), which utilizes many of the techniques already instigated by other workers in the field, but which adds the perceptual training devices (8, 25) being developed by psychologists and optometrists and which are being experimentally tested in the Lafayette, Indiana, Schools.

Discussion

The above work implies that the most successful approach to beginning reading will deal with the over-all maturational growth of the child. It is possible to accomplish this by incorporating into the curriculum many visuo-motor perceptual experiences graduated to meet the developmental level of the child. Although some authorities feel that an additional period for growth will solve this problem, the authors of this paper would propose that instead of just waiting for maturational growth, a program of curricular experiences be developed to facilitate this process.

Ideally, then, a child who has met with success in the reading process and who sees himself as capable of handling the difficult learning tasks confronting him, will come to develop, as part of his self-concept, a feeling of adequacy in relationship to new learning experiences. Current perceptual theories would lead us to the hypothesis that, as a result of his success with the beginning phases of reading, this child will more likely be able to perceive future inter-personal experiences in a positive, mentally-healthy manner.

As has already been mentioned, this theoretical point of view implies that emotional disturbance is more often a secondary factor coming out of the failures in the reading process, than it is the primary cause for the lack of success. If this is true, accurate early diagnosis together with a more complete knowledge and utilization of the perceptual processes in reading will result in less emotional disturbance in the classroom. As De Hirsch puts it, **"Not all children suffering from potential reading difficulties are primarily emotionally disturbed. However, their basic developmental lag in physiological-psychological functioning makes them especially susceptible to adverse educational experiences and as a result they often develop secondary emotional difficulties very early"** (9).

Many educators and psychologists have written on the emotional problems involved in the reading process. Currently, the emphasis is being placed on the possible causative interrelationship between emotional disturbance and brain damage (5, 6, 9, 27, 28). Children with this type of difficulty frequently have a difficult time learning to read. A better understanding of the perceptual problems of such children might lead to valuable information regarding the types of perceptual experiences youngsters must have to find success in the reading process.

The movement away from labeling these cases as "brain injured" to

"neurologically handicapped" and even "biologically impaired" denotes that current thinking is being directed to the concept that many of these cases have a disturbance in the perceptual-developmental growth of the child, rather than any definite trauma to the brain cells as the older term implied.

The factors causing more boys than girls to have difficulties in the reading process is an important topic which can only be handled superficially in this study. Betts (2), for example, states that from 60 to 80 per cent of all reading casualties in the elementary schools are boys. Fernald has also noted this sex difference (11). Several reasons for this have been suggested by various authorities on the subject. These include:

1. Reading is more of a recreational experience for girls.
2. Reading materials do not adequately challenge the interest of boys.
3. There is need for more men teachers in the elementary schools.

More consistent with the perceptual-neurophysiological approach would be the explanation of sex difference as a natural consequence of the different rates of maturation noted for boys in contrast to those of girls.

The child's ability to integrate his perceptions is closely related to his over-all functioning ability. It is believed, therefore, that more effective instructional techniques which facilitate the child's perceptual growth will make him function more adequately in all fields of endeavor. Some experimental evidence has been presented in this area by Getman (14) and Lyons and Lyons (20), who have reported a rather marked increase in scores on the Primary Mental Abilities Test given to children who had received a short term of special perceptual training.

In summary, the perceptual approach outlined in this paper, although not radically different from previous approaches, would appear to show promise in helping to instigate developmental and screening processes which would circumvent early reading problems. This would reduce the amount of emotional disturbance caused as a secondary reaction to reading failure, and, in turn, could conceivably help schools to develop within children a more complete ability to perceive, integrate, and cope with their total environment.

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The Reactions of a Group of High School Sophomores to Their Experiences in Special Classes

HELEN ERSKINE ROBERTS

For the past few years educators have tried to meet the needs of gifted children by three methods—enrichment in the regular classroom, acceleration, and ability grouping—or by some combination of these. Arguments have raged over the efficacy of each method. Some principals have pounded their desks and said, "I don't believe in acceleration," or "I don't believe in grouping." Instead of adopting such rigid attitudes, other principals have experimented with various methods in the hope of finding some answers to the question, "What shall we do for our gifted boys and girls?" This article is an outcome of one of these experiments.

In the fall of 1957 there were 610 new sophomores at Westchester High School in Los Angeles. A study of their cumulative records showed that more than 70 had obtained I.Q.'s of 130 or higher on one or both sections of the California Test of Mental Maturity, administered the preceding spring. Two special classes had been set up for some of these entering students—geometry and Life Science. The high school counselor had selected the members of the classes on the basis of their I.Q.'s, usually the composite score on the CTMM, and their grades in algebra or ninth-grade science. A few of the students who had earned "A's" in first-year Spanish were placed in a special Spanish class with selected eleventh-grade students. Four pupils were in the three special classes, and twelve were in both the geometry and Life Science special sections. Thirty-five of the sophomores with I.Q.'s above 130 were not included in any special class.

During the spring semester three special English classes were organized in order to provide challenging experiences for a larger number of students. Some of the members of these classes had I.Q.'s below 130 but had earned

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"A's" in the first semester of tenth-grade English. As a result of the addition of these English classes, 5 students now had four special "X" classes; 14 had three; 28 had two; and 47 were taking only one, which in most cases was English.

Problem

Since this was the first year there had been "X" classes at the high school, the principal and teachers were eager to ascertain how the members of these classes felt about their experiences. During the closing weeks of the semester some of the students had been complaining about staying up every night to complete their extra assignments; others had been worrying about the grades they would get in the special classes; a few said they wished they had never been placed in these sections. The problem, then, was to find out how the majority of the students felt about these and other questions.

Method

A committee of teachers prepared a questionnaire about the "X" classes, including questions about the time spent in study for the special classes, the comments made by the parents, and the grades earned by the students. The list of replies to the questions will give the complete contents of the questionnaire, which was given to the students in their English classes. The few who were not taking special English came to the office of the coordinator of the program to complete their questionnaires. Because no student was asked to sign his name, it is not possible to correlate the replies of each individual with his school marks.

The first question asked how many "X" classes the students had taken during the past term.

Question 2—"Please list them below:" was answered as follows:

English	84	Geometry II	29
Life Science	33	Spanish IV	12

Question 3—"If students were allowed to take only ONE 'X' class, which one would you recommend? Why?"

English	34	Foreign Language	3
Science	25	History	2
Mathematics	17	Major Subject	1
None	8		

Some of the reasons given were that special classes were most necessary in English because *"That is where you're held back by the other kids in an ordinary English class." "English is so important for later schooling." "It*

teaches you how to be a better person." "English is the basis for everything, and in the average class you do not learn enough."

Reasons given for special classes in science were: *"In this age science is very important." "It is the most important field one can go into." "The experiments and research give one a good preparation for college." "In our projects we study about things that are really interesting to us, and we aren't bored." "The special science class not only gives you a stronger background in science but develops your ability to work on your own."*

The students who felt that mathematics was most important gave the following reasons: *"Because of the harder work." "We consider things the other classes don't." "The teacher is fabulous." "Many students taking geometry can't catch on quick enough; in the special class we can go faster." "The students are better; so the class moves much faster, and there are more complete explanations when the class reaches a tough spot."*

Question 4—"What did you find valuable and satisfying in your other 'X' courses?" was answered as follows:

Learned more and covered subject more thoroughly	40
Classes more interesting-Students not bored	20
Moved at a faster pace	12
Not held back by "goof-offs"	10
Learned to write correctly	9
More personal guidance	4
Nothing more	2
Didn't like the class	1

Question 5—"Have you been expected to spend more time proportionately on your 'X' classes than on former regular classes in the same field?" Sixty-four answered that they had, and 23 said that they had not. To the question as to how much time they had spent, 48 replied that they had spent "many hours" or "two or three times as much." Only seven answered, "Not too much."

Question 6—"Have you spent proportionately more time on each 'X' class than on regular classes you have taken this semester?" received 57 affirmative answers and 27 negative. One boy complained, "All my classes are 'X' classes, and I've had to work too much."

Seventy-three gave a favorable answer to question 7—**"Have your efforts proved adequately rewarding to you personally?"** Eleven felt that the hard work had not been worthwhile. One boy who received low grades in two classes wrote, "What efforts?" Another boy wailed, "No, my losses have been greater than my gains; I have lost too much sleep, worked too hard, and haven't enjoyed life enough." On the other hand, the majority of the students agreed with the girl who wrote, "Yes, I truly feel that I have gained

more from these four classes this year than from any other group of classes in any other year."

The students apparently had some difficulty answering question 8, which asked them to "Number in the order of their importance to you the benefits you have derived from your membership in 'X' classes." Many did not answer this question completely but selected only a few of the items. Hence it seemed best to record only their first three choices.

	1	2	3
a. Ability to do research	7	7	5
b. Ability to think creatively	14	12	8
c. Ability to organize materials	5	5	9
d. Stimulation from class discussion	8	7	8
e. Development of vocabulary	2	9	5
f. Greater enjoyment of school work	3	5	7
g. Better preparation for college	20	4	4
h. Ability to see relationships	1	5	2
i. Ability to express ideas	7	12	15
j. Appreciation of our cultural heritage	—	2	2
k. Understanding of your abilities in relation to vocational choice	3	3	5
l. Greater awareness of your relationship to your environment	2	2	1

Question 9—"Do you feel that you would have earned the same grade in a regular class?"—was answered by every student, even by those who failed to answer as many as eight questions. The complete response and the many remarks written on the reverse side of the questionnaire show the importance of this question. Forty-one wrote "Yes," but 46 said "No." Three of those who answered in the affirmative said that their grades would have been the same but not for the same amount of effort. One of these students wrote, "In a regular class I would have gotten an 'A'—not earned it." Another said, "I'd have the same grade, but I wouldn't feel I had earned it, because the regular class would have been too easy."

Question 10—"Would you like to be in other 'X' classes next year?" Seventy-two said they would, and only fifteen said that they would not. Six said they would like to have four special classes, 14 wanted three classes, 34 preferred to have only two, and 19 wanted only one. Although 15 students had said that they didn't want any "X" classes next year, one girl changed her mind and said that she might like to have one. In listing the classes they wanted for the following year, 42 chose English, 36 selected advanced algebra, 28 wanted chemistry, and foreign language and history each received 16 votes.

The answers given to question 11—**"Do you think that next semester's tenth-grade students should take 'X' classes?"**—show that the majority of the sophomores felt that their work had been valuable. Sixty-seven gave unqualified affirmative answers. Twelve wrote, "Yes, if they are capable." Two said, "Yes, if they want to." One commented, "Yes, if we can take it, they can!" Two added, "Yes, but not more than two classes." Only four felt that the new tenth-grade students should not take "X" classes. This is in contrast to the fifteen who said they didn't want any more "X" classes themselves.

The last question was: **"What comments have your parents made about your placement in 'X' classes?"** Fifty-two students said that their parents favor the classes. Some added that their parents were delighted and felt that the classes were beneficial to the students. Eighteen pupils did not answer this question. Five said that their parents didn't know about the classes. One commented that his parents knew and didn't care one way or the other. Only four reported that their parents disapproved. Some of the students who wrote that their parents were in favor of the special classes added objections that had been raised. Thirteen said that there was too much work, and three objected to the way the students were being graded in the "X" classes.

Among the additional comments written by the students were the suggestion that the course of study in "X" classes be kept very flexible; the recommendation by one of the parents that a special diploma be given to the "X" students; and the suggestion by a student that "boys and girls should be in the special classes only if they have the ability to do the work and the will to apply themselves diligently."

Since so many of the students felt that they would have earned higher grades in regular classes, it may be worthwhile to examine the marks earned by the students in the "X" classes. Table I shows that the girls received higher grades than the boys. It also shows that many of the students may have been right when they wrote that they would have earned higher grades in regular classes.

TABLE I

Grades Earned by Special "X" Students

Grade	*D*		*C*		*B*		*A*	
	B	*G*	*B*	*G*	*B*	*G*	*B*	*G*
Subject:								
Geometry II	0	0	3	2	11	8	2	8
English (Sec. 1)	0	0	0	0	0	0	13	17
English (Sec. 2)	0	0	1	0	4	2	6	18
English (Sec. 3)	0	0	4	0	9	5	5	7
Life Science II	1	0	6	1	7	4	4	12
Spanish IV	0	0	1	0	3	7	8	13

Conclusions

It seems reasonable to conclude that the majority of the members of the "X" classes felt that classes grouped according to the ability of the students offered rewarding experiences, should be continued for the future tenth-graders, should be continued at the eleventh-grade level, and required a greater amount of effort than regular classes. The students were divided on the subject of school marks, a small majority indicating that they would probably have earned higher grades in regular classes.

Recommendations

On the basis of the replies to the questionnaire the following recommendations are made:

1. It is urgent that the problem of grading students in special classes be studied and that teachers pay no attention to the "normal curve" in such classes.

2. It is advisable that "X" classes be offered in those schools that have a sufficiently large enrollment.

3. Attention should be given to the number of classes carried by each "X" student.

4. There must be continuous, individual counseling for students in the special classes.

Perceptual Approach to Reading Difficulties

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